

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

The specification has been amended to correct minor typographical and grammatical errors. No new matter has been added.

Also, the Abstract has been amended to improve readability.

Claims 1, 5 and 9 are currently being cancelled.

Claims 2, 3 and 4 are currently being amended.

Claims 21-23 are currently being added. Support for new claim 21 may be found, for example, on page 17, line 28 to page 18, line 1 of the specification. Support for new claim 22 may be found, for example, on page 19, lines 15-17 of the specification. Support for new claim 23 may be found, for example, on page 20, lines 18-23 of the specification.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 2-4, 6-8 and 10-23 are now pending in this application.

As an initial procedural matter, it is noted with appreciation that the Office Action included an initialed copy of the Form PTO-1449 submitted in an Information Disclosure Statement (IDS) filed on July 13, 2001. However, please note that an IDS was also filed on May 14, 2003, whereby an initialed copy of the Form PTO SB/08 was not included with the Office Action. It is respectfully requested that an initialed copy of the Form PTO SB/08 submitted with the IDS filed on May 14, 2003, be included in the next correspondence from the PTO. If for some reason that IDS is not found at the PTO, the Examiner is requested to contact the undersigned by telephone, whereby copies

of the references submitted with that IDS (and copies of the stamped PTO mailing receipt) will be sent to the PTO so that the IDS can be considered.

In the Office Action, claim 1 was rejected under 35 U.S.C. Section 102(e) as being anticipated by U.S. Patent No. 6,317,343 to Okamura et al.; claims 5, 9 and 13 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Okamura et al.; claims 2, 6, 10, 14 and 19 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Okamura et al. in view of U.S. Patent No. 5,591,212 to Keimel; and claims 3, 4, 7, 8, 11, 12, 15, 16 and 18 to 20 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Okamura et al. in view of Keimel and further in view of U.S. Patent No. 5,246,552 to Kamiya et al. These rejections, to the extent that they may be applied to the presently pending claims, are respectfully traversed for at least the reasons given below.

The invention according to presently pending claim 2 is directed to a power control device that includes an electric power storage device provided across a power supply line for a load and including at least one electric double layer capacitor (EDLC) bank and a secondary battery combined with the EDLC bank. The EDLC bank includes a plurality of parallel-connected rows of EDLC unit cells, in which each of the rows includes a plurality of series-connected EDLC unit cells. The power control device also includes a control device controlling the electric power storage device so that when an input power to the electric power storage device is interrupted so as to result in a power interrupt, the EDLC bank supplies electric power to the load for an initial period of the power interrupt, and thereafter the secondary battery supplies electric power to the load.

Presently pending claim 2 thus recites a control device that controls both the EDLC bank and the secondary battery. More specifically, when an input power to the electric power storage device is interrupted, the control device controls, for a single load, a period in which the EDLC bank supplies electric power to the electric power storage device and another period in which the

secondary battery supplies electric power to the electric power storage device. By this control manner, a high energy density of the secondary battery can be obtained as well as the high-speed charging and discharging performances, high charging efficiency and high output density of the EDLC bank. The charging and discharging characteristics of both EDLC bank and secondary battery are compensated for by each other, whereby power backup for the load for a long time can be realized.

Turning now to the cited art of record, Keimel discloses a high energy density capacitor 54 (electric double layer capacitor) as shown in Fig. 3 of Keimel. The capacitor 54 is combined with a battery 50 when a switch 56 is closed. In Keimel, however, the capacitor 54 and the battery 50 supply electric power to different loads, those being a control circuit 42 and a DC-DC converter 46 respectively. Thus, Keimel fails to teach or suggest that two individual charging devices continuously supply electric power to the same load. Accordingly, even when Keimel is combined with Okamura et al., the invention as recited in presently pending claim 2 is not obvious to one of ordinary skill in the art. Therefore, presently pending claim 2, as well as claims 6, 10, 14 and 17 which depend either directly or indirectly from claim 2, are allowable.

The invention as recited in presently pending claim 3 is directed to a power control device that includes an electric power storage device provided across a power supply line for a load, and which includes at least one electric double layer capacitor (EDLC) bank and an aluminum solid electrolytic capacitor combined with the EDLC bank. The EDLC bank includes a plurality of parallel-connected rows of EDLC unit cells, in which each of the rows includes a plurality of series-connected EDLC unit cells. The power control device also includes a control device controlling the electric power storage device so that when an input power to the electric power storage device is interrupted, the aluminum solid electrolytic capacitor supplies electric power to the load for an initial period of the power interrupt, and thereafter the EDLC bank supplies electric power to the load.

Presently pending claim 3 thus recites a control device that controls both the EDLC bank and the aluminum solid electrolytic capacitor. More specifically, when an input power to the electric power storage device is interrupted, the control device controls, for a single load, a first period in which the aluminum solid electrolytic capacitor supplies electric power to the electric power storage device and for a second period in which the EDLC bank supplies electric power to the electric power storage device. By this control manner, a high energy density of the EDLC bank can be obtained as well as the high-speed charging and discharging performances and high output density of the aluminum solid electrolytic capacitor. The charging and discharging characteristics of both EDLC bank and aluminum solid electrolytic capacitor are compensated for by each other, whereby power backup for the load for a long time can be realized even if a sudden power supply variation such as power stoppage occurs.

Kamiya et al. disclose an aluminum solid electrolytic capacitor used as a filter. In Kamiya et al., however, aluminum solid electrolytic capacitors 14, 15 operate as a smoothing circuit. Also, it is noted that Kamiya et al. is directed to a method for cleaning and disinfecting soft contact lenses, and thus it is in a completely different art than Keimel and Okamura et al. Accordingly, i) Kamiya et al. fail to teach or suggest that the aluminum solid electrolytic capacitor and the EDLC bank are combined into a single electric power storage device, ii) Kamiya et al. fail to teach or suggest that power supply periods of both the EDLC bank and the aluminum solid electrolytic capacitor are controlled so that the charging and discharging characteristics of them are compensated for by each other, and iii) Kamiya et al. in any event is not properly combinable with the other cited art of record due to it being in a completely different art than the other cited reference..

Accordingly, even if Keimel and Kamiya et al. are combined with Okamura et al. (whereby Applicants submit that Kamiya et al. cannot be combined with the other two references for the reasons given above), the invention as recited in presently pending claim 3 is not obvious to one of

ordinary skill in the art. Therefore, presently pending claim 3, as well as claims 7, 11, 15 and 19 that depend either directly or indirectly from claim 3, are allowable.

Furthermore, the applicant believes that presently pending claim 4 and claims 8, 12, 16 and 20 which depend either directly or indirectly from amended claim 4, are also allowable over the cited references for the same reasons as described above.

New claims 21-23 have been added to recite additional features of the present invention that are believed to provide separate bases of patentability for those claims over the cited art of record, when taken as a whole.

Accordingly, Applicants believe that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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Date

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